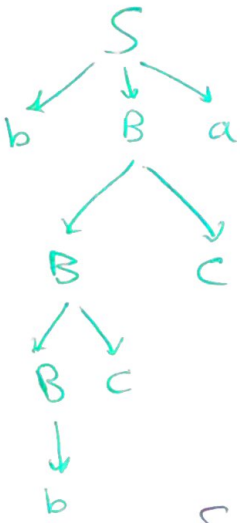
9/12/2015 الأربعاء م.ي سكشن 7

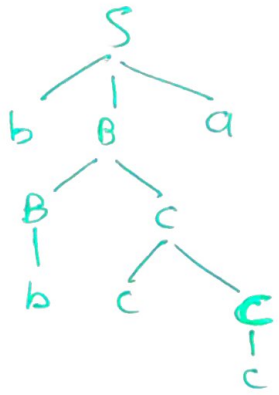
Sheet 6

1. $S \rightarrow bAb \mid bBa$
   $A \rightarrow aS \mid CB$
   $B \rightarrow b \mid BC$
   $C \rightarrow c \mid cC$

   bbccq

① ambiguous
② left recursive (B)
③ not left factored $S \rightarrow bAb \mid bBa$
↳ لو عندنا أكثر من قاعدة لا يم يبقى البداية مختلفة





rule rewrite :-

$S \rightarrow bT$
$T \rightarrow Ab \mid Ba$
$A \rightarrow aS \mid CB$
$B \rightarrow bD$
$C \rightarrow cD$
$D \rightarrow \varepsilon \mid cD$

	First	Follow
S	{ b }	{ $, b }
T	{a, c, b}	{ $, b }
A	{a, c}	{b}
B	{ b }	{a, b}
C	{ c }	{b}
D	{ ε, c }	{a, b}

Ex: $S\$ \Rightarrow bT\$ \Rightarrow bAb\$$
$\Rightarrow baSb\$ \Rightarrow babTb\$$
end character ↑

Parse Table

	a	b	c	$
S		bT		
T	Ab	Ba	Ab	
A	aS		CB	
B		bD		
C			cD	
D	ε	ε	cD	

کنار D فقط ε هست کافی از دنبال Follow
first

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2 $S \rightarrow U\ V\ W$

$U \rightarrow u \mid Wv \mid \varepsilon$

$V \rightarrow w \mid xU \mid \varepsilon$

$W \rightarrow y \mid z$

	First	Follow
S	{u, y, z, w, x}	{$}
U	{u, y, z, ε}	{w, x, y, z}
V	{w, x, ε}	{y, z}
W	{y, z}	{$, v}
u		{w, x, y, z}
v		{w, x, y, z}
w		{y, z}
x		{u, y, z}
y		{$, v}
z		{$, v}

Parse table

	u	v	w	x	y	z	#
S	uvw		uvw	uvw	uvw	uvw	
U	u		ε	ε	wv/ε	wv/ε	
V			w	xV	ε	ε	
W					y	z	

There is cells with two values so, the compiler cannot decide what to use

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$S \rightarrow Sab \mid c \mid dT \mid eS \mid SaT$

$T \rightarrow d \mid UV$

$U \rightarrow ab \mid \varepsilon$

$V \rightarrow dVb$

We cannot mak LL(1) parse table since the grammar is left recursive